**University of Montevallo SCIENCE and MATH Lesson Plan Format**

**Name:** Shelby Hillin

**Subject/Grade level:** 5th Grade **Group size:** 26

**Date lesson taught:** 11/6/2015 **School:** Valley Intermediate School

**Goals:** TSW gain an understanding of using formulas to find the volume of rectangular prisms and solids**.**

**ALCOS Standard:** Math 5:22 Relate volume to the operations of multiplication and addition, and solve real-world and mathematical problems involving volume.

b. Apply the formulas V = *l* x *w* x *h* and V = *B* x *h*

**Prerequisite Skills/Concepts:** Students should have an understanding of what volume is and how to measure volume by counting unit cubes and cubic units.

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| **Objectives (action verb – Bloom’s)** | **Assessment** |
| TSW identify measurement tools and the corresponding unit of measurement. | Whole group graphic organizer |
| TSW use formulas to find the volume of rectangular prisms. | Finding Volume Worksheet |

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| **Procedures -**  Before the lesson begins, TTW write the objectives for the day on the board. TTW also prepare the Promethean Board for the lesson presentation. | **Materials & Resources**  Promethean Board  Presentation  Computer |
| **ENGAGE**  TTW instruct the students to take out their math journals and label the next clean page with the title “Volume Formulas”  TTW begin the lesson on slide 3. TTW instruct the students to take a few minutes to solve the subtraction problem. TTW tell the students to give a quiet thumbs up over their heart when they have an answer.  TTW tell the students to think about another way of solving the problem if they have already found one way.  TTW ask a student to share the correct answer. TTW ask if the class agrees.  TTW ask a student to come up to the Promethean Board and walk the class through how they solved the problem.  TTW ask no more than two other students to share their ways for solving the problem.   TTW ask if the students have any questions about the number talk.   * **Purpose:** Today we are going to be reviewing the kinds of tools we measure things with. We are also going to learn the official formulas for finding volume of rectangular prisms. * **Objectives:**   + Identify tools of measurement and the corresponding unit of measurement   + Use V = L x W x H and V = B x h to find volume   **EXPLORE/EXPLAIN**  TTW display the slide with the graphic organizer on it. TTW explain that we are going to review the types of tools we use to measure things.  TTW ask students to list tools we use, and what unit of measure they use (ex. Ruler = inches/cm)  TTW fill in the organizer on the Promethean Board as students give answers  TTW follow the link on the next slide so that the class can practice choosing the appropriate unit of measurement for different objects.  TTW draw equity sticks to allow students to come up to the board and have a turn answering a question.  TTW decide when to stop the game based on observation of students.  Before going to the next slide, TTW ask the students to explain how they find volume.  TTW hear from a few students until the most common answers have been shared (bottom-bottom-up, find the area of the bottom and multiply by height, etc.)  TTW display the next slide that has the two volume formulas listed on it.  TTW ask the students if these formulas look familiar or if they have any idea how it fits with what they currently know about volume.  TTW explain what each letter in the formulas stands for.  TTW ask the students if they have any questions about the formulas.  TTW display the next slide and tell the students to solve the problem in their math journals.  After the students have had time to solve the problem, TTW have two students come work the problem out in the space provided using the formulas.  TTW repeat this process for the next slide.  TTW repeat this process for the slide with the word problem, too.  TTW have a student come to the board and build the model using the blocks on the presentation.  TTW ask the students if they have any questions about anything we have done to this point.  **EXTEND**  TTW display the next slide and click the link to the mental math volume activity.  TTW tell the students to put their pencils down and pay close attention to each problem.  TTW ask individual students to answer each questions in the game.  **EVALUATE**  TTW instruct students to complete the volume worksheet for homework if they do not finish in class and turn it in the next day.  **CLOSURE**  TTW tell the students that they have done a great job remembering all the tools we measure with and using the new formulas they learned to find volume.  TTW ask the students if they have any other questions about what they learned.  TTW pass out an index card to each student and explain they will be completing an exit slip.  TTW write the prompt on the board “I felt \_\_\_\_\_\_\_\_ about today’s lesson because \_\_\_\_\_\_\_\_\_\_.”  TSW fill out their index cards and place them in their assigned pockets on the bulletin board. | Math Journals  Pencil  Slide 3 - Number Talk Question  Promethean Pen  Say and Display – Slide 4  Slide 5  Promethean Pen  Slide 6  Appropriate Unit of Measurement Game  <https://www.ixl.com/math/grade-5/choose-the-appropriate-customary-unit-of-measure>  Slide 7  Slide 8  Slide 9  Slide 10  Slide 11  Mental Math Volume Activity <https://www.ixl.com/math/grade-6/volume-of-cubes-and-rectangular-prisms>  Index Cards |

**Accommodations**

* **Gifted students –** TSW have a challenge problem for finding volume. TSW complete this when they finish their classwork/homework early.
* **Two alternate explanation of material –** 
  + If students cannot remember many tools of measurement or units of measurement, TTW suggest an object to the students and ask how they would measure it.
  + If students struggle with the volume formulas, TTW use unifix cubes to visually illustrate volume to the students.
* **Struggling readers –** TTW read word problems aloud during whole group and if the students need problems read aloud during independent work TTW also do that.
* **ELL students –** TTW read word problems aloud; Spanish translations provided throughout

**Modifications:** No students in this class have an IEP.